

REMARKS/ARGUMENTS

1. Continued Examination

Applicants thank the examiner for considering the request to accept our application for continued examination.

2. §112 Rejections

The examiner has rejected claims 26 – 45 under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement. This rejection is made on the grounds that the claim(s) contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the art possession of the claimed invention. The applicants respectfully traverse this rejection as follows.

On page of the office action, claims 26-45 are rejected on the grounds that “Paragraphs 250 and 251 of the originally filed specification only discloses a cooling rate relative to the distance of the root but fail to relate the claimed cooling rates with the transition temperature of the glass being drawn.” The applicants respectfully traverse this rejection as follows.

Independent Claim 1 as amended claims:

“cooling the glass sheet **at a first cooling rate** between about 6°C/in and 15°C/in **while the temperature of the glass sheet is greater than the glass transition temperature range of the sheet;**

cooling the glass sheet **at a second cooling rate** between about 4°C/in and 10°C/in **while the temperature of the glass sheet is within the glass transition temperature range of the sheet;** and

cooling the glass sheet **at a third cooling rate** between about 2°C /in and 5°C /in **after the second cooling rate and the temperature of the glass sheet is within the glass transition temperature range of the sheet.”** (emphasis added)

Paragraph 250 of the application as originally filed discloses:

“[The] glass is cooled at a relatively high rate at temperatures above the glass transition region, illustratively in a range of approximately 6°C/in. to approximately 15°C/in.” (emphasis added)

Paragraph 260 of the application as originally filed discloses:

“Next, at the upper portion of the glass transition region, the rate of cooling is reduced to in the range of approximately 4°C/in. to approximately 10°C/in.” (emphasis added)

Paragraph 420, lines 2-3 and lines 5-6, of the application as originally filed discloses:

“[The] rate of cooling is changed in the lower end of the glass transition region to a cooling rate of approximately 2°C/in. to approximately 5°C/in.”

“After the glass has traversed the glass transition region, the cooling rate is maintained at a substantially constant level.” (emphasis added)

Throughout the specification, such as at lines 1-2 of paragraph 170, the term “glass transition region” is used to refer to the “glass transition region temperature range” of the glass as it cools (emphasis added).

The Examiner’s attention is also directed to Figure 3 of the instant application, in which the cooling rate, as illustrated by slope of the lines on the graph (temperature on Y-axis vs. distance from the root (or time) on the X-axis), is related to the temperature of the glass sheet as it drops from the root of the isopipe, as illustrated on Y-axis on right hand side of graph. The Examiner’s attention is further drawn to paragraph 230 lines 1-5, paragraph 240 lines 1-3, paragraph 280 line 3 through end of paragraph 320, paragraph 400 lines 3-4, and paragraph 410 lines 1-3 of the specification.

It is respectfully submitted that Figure 3 and the above referenced sections of the specification of the instant invention as originally filed clearly describe how the first

cooling rate (paragraph 250), second cooling rate (paragraph 260), and third cooling rate (paragraph 420) all relate to the glass transition temperature range or region of the glass as claimed in claim 1 as amended. More specifically, the specification as originally filed clearly describes how the first cooling rate occurs when the temperature of the glass sheet is "above the glass transition region," i.e. before the glass sheet has cooled to a temperature in the glass transition temperature region; the second cooling rate occurs when the temperature of the glass sheet is in or at "the upper portion of the glass transition region," i.e. when the glass has cooled to a temperature in the upper portion of the glass transition temperature region; and the third cooling rate occurs when the temperature of the glass is in or at "the end of the glass transition region," i.e. when the glass has cooled to a temperature in the end or lower region of the glass transition temperature region. As such, it is requested that the rejection of claims 26 through 32 as not being supported by the specification as originally filed be withdrawn.

Independent claim 33 claims:

"cooling the glass sheet at a first cooling rate between about 6°C/in and 15°C/in while the temperature of the glass sheet is greater than about 850°C;
cooling the glass sheet at a second cooling rate between about 4°C/in and 10°C/in while the temperature of the glass sheet is between about 850°C and 650°C; and
cooling the glass sheet at a third cooling rate between about 2°C /in and 5°C /in after the second cooling rate and while the temperature of the glass sheet is between about 850°C and 650°C."

As discussed above in relation to claims 26 through 32, the specification as originally filed provides clear support for the relation of the cooling rate to the temperature of the glass. Moreover, paragraph 220 lines 4 to 5 of the specification as originally filed discloses that the "glass transition temperature region occurs in many glasses over temperature ranges between approximately 850°C and approximately 650°C." Thus, paragraphs 220, 260 and 420 of the specification clearly describe the

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relation of the cooling rates with the specific temperatures claimed in claims 33 through 37. As such, it is requested that the rejection of claims 33 through 37 be withdrawn.

Independent claim 38 has been amended in a manner that is believed to overcome the rejection of claims 38 through 45. As such, it is respectfully requested that the rejection of claims 38 through 45 be withdrawn.


Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Bruce Watson at 607-974-3378.

Respectfully submitted,

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